STATEMENT of LEGAL and FACTUAL BASIS

For CPFilms, Inc. – Axton Virginia Facility

UNDER 9 VAC 5 Chapter 80 Article 1 (TITLE V-CLEAN AIR ACT)

APPLICANT:
VA-30877 AIRS ID 51-089-0091
CPFilms, Inc.
P.O. Box 5068
Martinsville, Virginia 24115

FACILITY LOCATION:
US Route 58 east of Martinsville near the intersection of State Route 648 in Henry County
UTM Coordinates are ZONE: 17; EASTING: 612.0 km; NORTHING: 4059.3 km

FACILITY DESCRIPTION:
CPFilms, Inc. is a manufacturer of solar controlled window film covered by Standard Industrial Classification (SIC) Code 2672. The facility has the potential to operate twenty-four (24) hours per day, seven (7) days per week, fifty-two (52) weeks per year.

EMISSIONS SUMMARY:

PLANTWIDE EMISSIONS SUMMARY FOR 1999		
CRITERIA POLLUTANTS	POTENTIAL EMISSIONS	1999 ACTUAL EMISSIONS
Particulate Matter (PM-10)		
Nitrogen Oxides (NOx)		
Sulfur Dioxide (SO2)		
Carbon Monoxide (CO)		
Volatile Organic Compounds (VOC)	248.0 tons	194 tons
Ethylene glycol		175 tons

TITLE V PROGRAM APPLICABILITY BASIS:

This facility has the potential to emit 248.0 tons per year of volatile organic compounds, of which the majority is ethylene glycol. Due to this facility's potential to emit over 100 tons per year of a criteria pollutant and in excess of 10/25 tons per year of a HAP, CPFilms, Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 9 VAC 5 Chapter 80 Article 1.

LEGAL AND FACTUAL BASIS FOR PERMIT CONDITIONS:

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the Commonwealth of Virginia Federal Operating Permit Regulations for the purposes of Title V of the Federal Clean Air Act (9 VAC 5 Chapter 80 Article 1), and underlying applicable requirements in other state and federal rules. Applicable requirement means all of the following as they apply to emission units in a Title V source:

a. Any standard or other requirement provided for in the State Implementation Plan or the Federal Implementation Plan, including any source-specific provisions such as consent agreements or orders.

b. Any term or condition of any preconstruction permit issued pursuant to 9 VAC 5-80-10, Article 8 (9 VAC 5-80-1700 et seq.) of this part or 9 VAC 5-80-30 or of any operating permit issued pursuant to 9 VAC 5 Chapter 80 Article 5, except for terms or conditions derived from applicable state requirements or from any requirement of these regulations not included in the definition of applicable requirement.

c. Any standard or other requirement prescribed under these regulations, particularly the provisions of 9 VAC 5 Chapter 40 (9 VAC 5-40-10 et seq.), 9 VAC 5 Chapter 50 (9 VAC 5-50-10 et seq.) or 9 VAC 5 Chapter 60 (9 VAC 5-60-10 et seq.), adopted pursuant to requirements of the federal Clean Air Act or under '111, 112 or 129 of the federal Clean Air Act.

d. Any requirement concerning accident prevention under §112(r)(7) of the federal Clean Air Act.

e. Any compliance monitoring requirements established pursuant to either §504(b) or §114(a)(3) of the federal Clean Air Act or these regulations.

f. Any standard or other requirement for consumer and commercial products under §183(e) of the federal Clean Air Act.

g. Any standard or other requirement for tank vessels under §183(f) of the federal Clean Air Act.

h. Any standard or other requirement in 40 CFR Part 55 to control air pollution from outer continental shelf sources.

i. Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the federal Clean Air Act, unless the administrator has determined that such requirements need not be contained in a permit issued under this article.

j. With regard to temporary sources subject to 9 VAC 5-80-130, (i) any ambient air quality standard, except applicable state requirements, and (ii) requirements regarding increments or visibility as provided in Article 8 (9 VAC 5-80-1700 et seq.) of this part.

k. Any standard or other requirement of the acid deposition control program under Title IV of the Clean Air Act or the regulations promulgated thereunder.

l. Any standard or other requirement governing solid waste incineration under §129 of the Clean Air Act.

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 9 VAC 5 Chapter 80 Article 1 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the state but is not federally-enforceable is identified in the Title V permit as such.

PROCESS DESCRIPTION

The significant emissions unit at the Axton facility consists of two continuous polyester film dye lines (Nos. 5 & 6), each rated at 48,750 ft^2 film/hr. These dye lines are identified as Emission Unit No. / Stack ID No. 01/01 and 02/02, respectively. Each dye line consists of the following devices: an unwinding station, a dye mixing tank, a heated ethylene glycol (EG) dye bath, a N-methyl pyrrolidone (NMP) wash bath, two water wash baths, a dryer, and a rewinding station. The dispersive powdered dyes are mixed in EG tanks and pumped to the dye bath. The continuous web film passes through the heated dye bath, where the dye penetrates the film. The EG vapors from the dye baths are collected by fume capture hoods, with a designed capture efficiency of 95%, and the EG is recovered for reuse by the EG recovery system. The EG recovery system consists of a precooler in series with a Brinks mist eliminator and recovered solvent storage tanks. Following the dye bath, the film is washed in NMP and two subsequent water baths to remove the excess dyes. The NMP baths, water wash baths, and dryers do not have exhaust hoods or VOC emissions control devices, but their VOC emissions are vented through the building's roof and wall exhaust vents. After rinsing, the film is dried. The dryer's burner is rated at 1.2 MMBtu/hr and combusts only propane, and is an insignificant emission unit. The mixed NMP and water waste is pumped into storage tanks for off-site product recovery, but most of the waste goes to the source's waste water treatment facility in Fieldale. The dried film is packaged for shipment to other film processing facilities or to customers. This facility does not apply adhesives or finishes to the film. There are no particulate emissions from the operation of the two dye lines.

REGULATORY REQUIREMENTS

The State Operating Permit dated February 27, 2001 for the Axton facility contains the following limits:

a. The hourly VOC emissions from each EG recovery system stack limited to 14.54 lb/hr.
b. The annual VOC emissions from the film dyeing facility limited to 248.0 tons/yr.
c. VOC emissions from each of the dye baths are to be controlled by a fume capture hood and an EG recovery system.
d. Each EG recovery system shall demonstrate a VOC recovery efficiency of 95%.
e. The exhaust stack temperature from each EG recovery system stack not to exceed 120°F.
f. A device to measure the pressure drop across each dye bath fume capture hood.
g. A device to measure the pressure drop across each mist eliminator.
h. A device to continuously measure and record the stack temperature from each EG recovery system.
i. The permittee is required to perform a stack test on one of the recovery systems to demonstrate compliance with the hourly VOC emission limits and recovery efficiency.

Compliance to the annual VOC (EG & NMP) emissions from the two dye lines will be determined through a mass balance VOC equation as specified in Permit Condition IIH(1) a through f, which will include the following records:

a) production records,
b) purchasing records,
c) inventory records,
d) dyeing machine operating hours,
e) EG and NMP retention rate (lb/hr) in dried film,
f) EG and NMP loss rate (lb/hr) to waste water, and
g) records of solvents shipped off-site for disposal/recovery.
h) Operating parameter records for the EG & NMP control device.

The annual VOC emissions will be calculated as the sum of each consecutive twelve month period. In addition, the permittee will conduct a weekly visible emission observation (see Periodic Monitoring). The dye lines are subject to the provisions of Article 1 of 9 VAC 5-50, and the opacity from the EG recovery system exhaust stacks, roof vents, and wall vents shall not exceed the limitation per 9 VAC 5-50-80.

PERIODIC MONITORING

The EG dye bath fume capture system's collection efficiency will be demonstrated by maintaining a minimum 0.25" WC vacuum in the stationary ducts leading to the EG recovery system. The permittee will record the pressure drop across the fume capture hood in a log book once per shift. If the pressure drop is less than –0.25 WC, the operator will shut down the dye line and take timely corrective action. The permittee will maintain a log book with the date, name of the operator, pressure drop readings, malfunctions, and any corrective actions taken.

The EG recovery system's efficiency will be demonstrated by continuous monitoring and recording of the exhaust temperature, and continuous monitoring of the pressure drop across the demister. Each EG recovery system will be operated at a 100º F set point and equipped with an alarm to notify the operator when the exhaust temperature exceeds 110º F. When the EG recovery system exhaust temperature exceeds 120º F, the operator will shut down the dye line and take timely corrective action. The prescribed operating range for the pressure drop across each demister is 4.0" WC to 12.0" WC. CPFilms will record the pressure drop across each of the fume capture hood, and the pressure drop and temperature of each of the EG recovery system in a log book once per shift. If the pressure drop is outside of the prescribed range, the operator will shut down the dye line and take corrective action. CPFilms will maintain a log book with the date, name of the operator(s), temperature strip charts, pressure drop readings, malfunctions, and any corrective actions taken.

Monitoring of opacity will require the source to, at least one time per calendar week, observe for the presence of visible emissions from the exhaust stacks from the dye lines (Ref. Nos. 01 and 02), when these emission units are operating. If visible emissions are observed, the permittee will have the option to take timely corrective action to resume operations without visible emissions or perform a VEE in accordance with 40 CFR 60, Appendix A, Method 9 to assure visible emissions' compliance. The permittee will keep a log of observations, any VEE recordings and any corrective actions. If any emission unit has not operated for any period during the week, this fact shall be noted in the individual log, and the visible emission observation for the idle emission unit was not required. If no visible emissions are observed for a 6-month period, visible emission observations may then be performed on a monthly basis. The permittee will again keep a log of monthly observations, any VE recordings and any corrective actions. In the instance that visible emissions are recorded, the permittee shall then revert back to a weekly visible emission observation schedule.

COMPLIANCE DEMONSTRATION

In Compliance - CPFilms submitted a test protocol for ethylene glycol emissions and control compliance test program on August 7, 2001. An Inspection and test audit was performed on August 28, 2001. The test was conducted on the #5 dye line inlet to the ethylene glycol recovery system and at the exhaust stack in order to evaluate compliance with the VOC emission rate and efficiency requirements.

REQUEST FOR VARIANCES OR ALTERNATIVES:

None

COMMENT PERIOD:

The public notice appeared in the *Martinsville Bulletin* on Sunday, July 1, 2001.

Beginning Date: July 2, 2001
Ending Date: August 1, 2001

Written comments were received from EPA Region III in an electronic mail notification fom Dave Campbell dated July 27, 2001. Verbal and written comments were received from CPFilms, Inc. in July 2001 and on August 13, 2001 respectively. Comments received from EPA and CPFilms, Inc. are herein addressed in the DEQ response to comments and proposed permit dated August 14, 2001. EPA Region III accepted the proposed permit on September 26, 2001.